

REMARKS

This is a response to a final *Office Action* mailed November 14, 2005, in which a three (3) month Shortened Statutory Period for Response has been set, and which expired February 14, 2006. Please extend the period of time for response three (3) months. Claims 5, 7-15, and 17 were previously canceled. Claims 1-4, 6, 16, 19, 20, and 22-27 have been amended herein. Claims 28-34 have been added herein. Thus, Claims 1-4, 6, 16, and 18-34 are pending. No new subject matter has been added to the application. The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

Allowable Subject Matter

Applicants acknowledge with appreciation the indication that the subject matter of claim 22 would be allowable if rewritten into independent form. Applicants have amended claim 22 into independent form to include all the limitations of its respective base claim and any intervening claims. Applicants wish to emphasize that the amendment to claim 22 is made for purposes of placing the claim in condition for allowance to expedite issuance, and not in response to any rejections based on cited art. Thus, claim 22 is in condition for allowance.

Rejections of Claims 1-4, 6, 16, and 18 under 35 U.S.C. § 102(b) by Demler, Sr.

Claims 1-4, 6, 16, and 18 stand rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 3,674,292 issued to Demler, Sr. (Demler). Applicants respectfully traverse these rejections.

Demler discloses a connection device for connecting ends of tubular members together. The connection device of Demler comprises a hollow body member 1 and separate ferrule members 2. Column 2, lines 59-61. The exterior surface the body member 1 is slightly tapered to facilitate movement of the ferrule members 2 onto the body member 1. Column 2, lines 74-75 and column 3, lines 1-2.

To assemble the Demler system, an end of a tubular member 6 is inserted into the hollow body member 1. The ferrule member 2 is then placed over the body member 1. Column 3, lines 21-30. The ferrule member 2 applies compressive pressure on the body member 1 to reduce the diameter of the body member 1. In this manner, the ferrule member 2 causes the body member 1 to contract and tighten around the end of the tube 6. Column 3, lines 25-27 and 42-45; see Abstract. As shown in Figure 9 of Demler, multiple tubular members can be attached to the body member 1.

Claims 1-4 and 6

Amended claim 1 recites:

A system comprising:

- a structural work piece having an opening;
- a tubular fitting received in the opening of the structural work piece, the fitting comprising:
 - a ring portion having an outer circumference and an inner circumference, the outer circumference being closely receivable by the opening in the structural work piece when the ring portion is inserted into the opening;
 - at least a first coupling member having at least a minimum inner circumference, an outer envelope, and an end section, the coupling member extending axially from the ring portion, the minimum inner circumference being larger than the inner circumference of the ring portion, the outer envelope sized to be moved through the opening in the work piece, and the end section configured to be engageable with another device; and
- wherein the ring portion is expanded so as to establish a secure interference fit between the outer circumference of the ring portion and the opening in the work piece.

Applicants believe that Demler does not teach or suggest, *inter alia*, a tubular fitting for connecting a device to a structural member. In contrast to Claim 1, Demler discloses the connection device for connecting tubes in a fluid system. Figure 7 of Demler cited by the Examiner illustrates a connection member between two tubes that carry a fluid. The cited connection member is not received by a structural work piece. Advantageously, in some embodiments, Applicants' fitting is used to connect conduits to a structural work piece, such as a

wall or bulkhead in an aircraft. When conduits are coupled to the installed fitting, the fitting can establish a pathway through the structural work piece between the conduits.

Furthermore, Demler does not teach or suggest that the ring portion is expanded so as to establish a secure interference fit between the outer circumference of the ring portion and the opening in the work piece. In contrast, Demler discloses using ferrule members 2 to compress the body member 1 against the tubular members 6. Column 3, lines 22-30. As noted above, the ferrule members 2 cause the “tapered sections of body member 1 to be slightly decreased in diameter,” not expanded. Thus, the diameters of the body member 1 and tubular member 6 are decreased due to forces applied by the ferrule member. Demler simply does not disclose, teach, or suggest a fitting having the expanded ring portion as recited in claim 1.

Consequently, claim 1 is novel over Demler. Because claims 2-4 and 6 depend from an allowable base claim, and also because they include additional limitations, these claims are likewise allowable.

Claims 16 and 18

Amended claim 16 recites, *inter alia*, “a radial flange extending outwardly from the outer circumference of the ring portion, the radial flange being dimensioned so as to abut against and extend in an outward radial direction along a portion of the work piece when the ring portion is closely received by the opening in the work piece.” Applicants believe that Demler does not disclose, teach, or suggest a radial flange that extends in an outward radial direction from the ring portion. In contrast to Claim 16, Demler discloses the connector member having two centrally disposed annular projections spaced from each other. See Figure 7 of Demler. Neither projection of Demler has a radial flange, let alone a radial flange dimensioned so as to abut against and extend in an outward radial direction along a portion of the work piece when the ring portion is closely received by the opening in the work piece.

Consequently, claim 16 is novel over Demler. Because claim 18 depends from allowable base claim 16, and also because it includes additional limitations, claim 18 is likewise allowable.

Rejections of Claims 19-21 and 23-24 under 35 U.S.C. § 102(b) by Robertson

Claims 19-21 and 23-24 stand rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 2,092,358 issued to Robertson. Applicants respectfully traverse these rejections.

Robertson discloses expandable sleeves for fixing metal tubes in plates. See, e.g., page 1, lines 1-3. As shown in Figures 1-13 and 16-19 of Robertson, an end of a tube is disposed between an expandable sleeve *a* and a plate *d*. The sleeve *a* is radially expanded in order to press the tube *b* into the plate *d*. The end of the tube *b* remains between the sleeve *a* and the plate *d* after the sleeve *a* is expanded.

Claim 19

Amended Claim 19 recites, *inter alia*, an outer circumference of the ring portion being closely receivable by the opening in the structural member before the ring portion is radially expanded. In contrast to claim 19, the expandable sleeve *a* of Robertson is positioned within the end of a thin metal tube. As such, the sleeve *a* is not closely receivable by the opening in the structural member. The *Office Action* states that the fitting C of Robertson can be tightly placed in both the tube *b* and wall *d*. Second full paragraph, page 7. However, the tube *b* is not a structural member as recited in claim 19.

Additionally, claim 19 further recites that the ring portion is radially expanded a sufficient amount to establish a secure interference fit between the outer circumference of the ring portion and the inner surface of the opening contacting the outer circumference. In contrast, Robertson discloses that the outer surface of the expanded metal tube engages the opening in the plate *d*. Page 1, lines 43-54. The outer surface of the expanded portion of the Robertson sleeve *a* contacts the inner surface of the tube *b*, not the plate *d*. Advantageously, in some embodiments, conduits can be temporarily or permanently coupled to the Applicant's installed fitting. If needed, conduits can thus be conveniently replaced without having to remove the Applicant's fitting from the opening, unlike the Robertson sleeve *a*.

Thus, because Robertson does not disclose, teach, or suggest each and every limitation of claim 19, Applicant's respectfully submit that claim 19 is in condition for allowance.

Claims 20, 21, 23, and 24

Claim 20 recites, in part, a ring portion having an outer circumference sized to fit tightly within the opening of the structural work piece while the first portion extends outwardly from the structural work piece. In contrast to claim 20, the expandable sleeve *a* of Robertson is positioned within the end of the metal tube, which extends into the plate *d*. As noted above, the tube *b* is not a structural work piece, and the sleeve *a* of Robertson is not closely received in an opening of the wall *d*.

Claim 20 further recites expanding the ring portion such that the outer circumference of the ring portion contacts the opening so as to form an interference fit. In contrast, Robertson discloses that the outer surface of the expanded metal tube *b* engages the opening in the plate *d* so as to secure the tube *b* in the plate *d*. Page 1, lines 43-54. The outer surface of the expanded portion of the Robertson sleeve *a* contacts the inner surface of the tube *b*, not the plate *d*.

Consequently, claim 20 is novel over Robertson. Dependant claims 21, 23, and 24 are patentably distinguished over Robertson for at least the reasons with respect to the base claim 20 as well as for novel and nonobvious combinations of features recited therein.

Rejections of Claims 20 and 21 under 35 U.S.C. § 102(b) by Tsuda

Claims 20 and 21 stand rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 3,997,193 issued to Tsuda et al. (Tsuda). Applicants respectfully traverse these rejections.

Tsuda discloses methods of connecting one pipe section to another pipe section. In brief, Tsuda discloses a connector 10 that includes a top section A, an intermediate section B, and a rear section C (Figure 2a). The top section A of the connector 10 is inserted into one end of an insulation pipe 15. After insertion, a build-up device 16 expands the portion of the connector 10 disposed within the pipe 15 so that the connector 10 deforms the inner surface of the pipe 15. Column 6, lines 3-19; and Figures 3a and 11. Another pipe section is then connected to the connector 10.

Amended claim 20 recites, *inter alia*, “inserting a first portion of a fitting into the opening of the structural work piece.” Applicants respectfully submit that Tsuda does not disclose, teach, or suggest a structural work piece as claimed. In contrast, Tsuda teaches that the connector 10 is inserted into an end of an insulation pipe 15, not a structural work piece. One of ordinary skill would understand that the insulation pipe 15 is not a structural work piece. Thus, Tsuda does not disclose, teach, or suggest inserting a first portion of a fitting into the opening of the structural work piece.

Additionally, claim 20 further recites that the first portion of the fitting has an inner circumference sized to be slightly larger than the increased circumference section of the mandrel. In contrast, Tsuda discloses that the ring section 14 (cited by the Examiner) extends inwardly such that the build-up device 16 contacts and expands the ring section 14. Column 6, lines 4-17. The ring 14 of Tsuda thus has a diameter equal to or less than the diameter of the build-up device 16. Tsuda simply does not disclose, teach, or suggest that the first portion of the fitting has an inner circumference sized to be slightly larger than the increased circumference section of the mandrel. Advantageously, in some embodiments, Applicant’s ring portion of the fitting can be expanded without appreciably expanding the first portion to which conduits can be attached. The size of the first portion can be maintained to ensure a proper fit with a conduit.

Consequently, claim 20 is novel over Tsuda. Because claim 21 depends from an allowable base claim, and also because it includes additional limitations, claim 21 is likewise allowable.

Claims 25-27 not addressed in *Office Action*

Claims 25-27 were added by way of the Amendment filed on August 12, 2005. The Examiner entered the amendment but did not address these claims in the *Office Action* mailed November 14, 2005. Applicants respectfully request examination of claims 25-27.

New Claims

Claims 28-34 have been added. These claims are fully supported by the application as filed. Accordingly, no new matter has been added by this amendment. Consideration of new Claims 28-34 is respectfully requested.


Conclusion

Overall, the cited references do not singly, or in any motivated combination, teach or suggest the claimed features of the embodiments recited in the pending independent claim, and thus such claims are allowable. The pending dependent claims are patentably distinguished over the cited references for at least the reasons with respect to their respective base claims as well as for novel and nonobvious combinations of features recited therein. Furthermore, any remarks in support of patentability of one claim should not be imputed to any other claim, even if similar terminology is used. Any remarks referring to only a portion of a claim should not be understood to base patentability on that portion; rather, patentability must rest on each claim taken as a whole.

Applicants respectfully traverse each of the Examiner's rejections and each of the Examiner's assertions regarding what the cited references show or teach, even if not expressly discussed herein. Although changes to the claims have been made, no acquiescence or estoppel is or should be implied thereby; such amendments are made only to expedite prosecution of the present application and are without prejudice to the presentation or assertion, in the future, of claims relating to the same or similar subject matter. Applicants submit that all remarks herein that reference structural analogies between Applicants' embodiments and those in the cited references are provided for brevity and clarity and do not constitute admissions that such features are actually analogous and/or even structurally similar. Any discussion of embodiments disclosed in the application, and the discussion of the differences between disclosed embodiments and the connectors taught by the cited references, does not define the scope or interpretation of any of the claims. Instead, such discussion is to help the Examiner appreciate the important distinctions between disclosed embodiments and the cited connectors.

If the undersigned attorney has overlooked a relevant teaching in any of the references, the Examiner is requested to point out specifically where such teaching may be found. In light of the above amendments and remarks, Applicants respectfully submit that all pending claims are allowable. Applicants, therefore, respectfully request that the Examiner reconsider this application and timely allow all pending claims. Examiner Bochna is encouraged to contact Mr. Klassen by telephone to discuss the above and any other distinctions between the claims and the applied references, if desired. If the Examiner notes any informalities in the claims, he is encouraged to contact Mr. Klassen by telephone to expediently correct such informalities.

Respectfully submitted,
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